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AUTHORS:

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TITLE:

(16) Infrared absorption spectra of diaspor α -AlOOH, boehmite γ -AlOOH and GaOOH

PERIODICAL:

(15) Zhurnal strukturnoy khimii, v. 3, no. 6, 1962, 680-684

TEXT:

Specimens of natural and synthetic diaspor, GaOOH, boehmite and deuterobohmite were studied in the spectral region 420-4000 cm^{-1} . The comparatively high values found for the $\delta(\text{OH})$ frequencies and the presence of moderately stable hydrogen bonds in the lattice of diaspor and GaOOH suggest that the Al-O and Ga-O bonds in these crystals are largely covalent, as is the Al-O bond in boehmite. The valence oscillations of these bonds correspond to bands with frequencies of 760 cm^{-1} for diaspor, 720-780 cm^{-1} for boehmite, and 640 cm^{-1} for GaOOH. In the case of boehmite the $\nu(\text{OH})$ frequencies vary with time and depend substantially on the way in which this compound is prepared. The OH....O bond may be

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Infrared absorption ...

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curved and not straight. The origin of bands in the 1950-2100 cm^{-1} spectral region of boehmite and diaspor cannot as yet be established. It is also impossible to interpret simply the area below 650 cm^{-1} in the diaspor spectrum and 600 cm^{-1} in the GaOOH spectrum. There are 4 figures.

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